

PROJECT DATA

Advanced Energy Conversion, LLC - 03GO13166

Commercialization of a 2.5kW Utility Interactive Inverter for Distributed Generation

<p>Recipient: Advanced Energy Conversion, LLC</p> <p>Recipient Project Director: David Torrey 518.235.8835 155 West High St. Ballston Spa, NY 12020</p> <p>Recipient Type: For-Profit Organization</p> <p>Subcontractor(s):</p> <p>EERE Program: Distributed Energy</p>	<p>Instrument Number: DE-FG36-03GO13166</p> <p>CPS Number: 17826</p> <p>HQ Program Manager: Lisa Barnett 202.586.2212</p> <p>GO Project Officer: Gibson Asuquo 303.275.4910</p> <p>GO Contract Specialist: Melissa Wise 303.275.4907</p> <p>B&R Number(s): ED1906020</p> <p>PES Number(s): 03-10157</p> <p>State Congressional District: NY - 20</p>
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PROJECT SCOPE: The objective of this project is to develop, test, refine, and commercialize a 2.5kW utility-interactive inverter system for distributed generation. AEC will bring the inverter technology from its current pre-production state to a commercial product. This award will be used to build and test production-intent inverters, support the implementation of the commercialization plan, and bring the product through UL certification.

FINANCIAL ASSISTANCE

Approved DOE Budget:	\$125,000	Approved DOE Share:	\$125,000
Obligated DOE Funds:	\$125,000	Cost Share:	\$105,625
Remaining Obligation:	\$0		
Unpaid Balance:	\$49,281	TOTAL PROJECT:	\$230,625

Project Period:

TECHNICAL PERFORMANCE
DE-FG36-03GO13166
Advanced Energy Conversion, LLC
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PROJECT SYNOPSIS

The objective of this project is to develop, test, refine and commercialize a 2.5kW utility-interactive inverter system for distributed generation. Advanced Energy Conversion (AEC) will bring the inverter technology from its current pre-production state to a commercial product. This award will be used to build and test production-intent inverters, support the implementation of the commercialization plan, and bring the product through UL certification.

SUMMARY OF TECHNICAL PROGRESS

The transformer design has been completed. A firm that can support production volume is making prototypes for use in the production-intent design. AEC has had discussions with two distributors of solar photovoltaic equipment regarding the distribution of their inverter. They have narrowed their potential production partners from ten firms to two. They expect that the final decision will be based largely on cost. AEC is planning to perform final assembly and test internally while outsourcing the manufacture of printed circuit boards and the enclosure.

The production intent design is being tested and refined as necessary to resolve minor technical issues and accommodate changing market conditions. One patent is pending and a second application is being finalized. The pending patent covers the inverter topology and the patent application about to be filed covers the control of the inverter. Production-intent prototypes are being fabricated in-house by AEC to verify manufacturing and assembly documents. AEC has completed a test facility that allows for testing compliance with IEEE Standard 929-2000. This will facilitate inverter evaluation relative to UL 1741. It is expected that this test facility will form the basis of equipment that will be used for final testing of inverters according to the manufacturing plan. Experimental evaluation of the production intent inverter is underway.

SUMMARY OF PLANNED WORK

AEC is currently evaluating the production intent inverter. The experimental evaluation will include characterization of inverter performance over the specified input voltage range. The performance is taken to include inverter efficiency, utility power factor, power point tracking, and anti-islanding performance. AEC also plans to start manufacturing prototypes according to the manufacturing plan. It is expected that this task will involve the fabrication of a number of fixtures that will reduce the amount of manual labor required for manufacture. The test facility for the internal compliance testing is ready for use. AEC is also currently working on the technical manual and expects it to be nearly complete by the end of the next quarter.

PROJECT ANALYSIS

The project is on schedule and within budget. No major obstacles are seen that would prevent AEC from successfully completing their award.

ACTION REQUIRED BY DOE HEADQUARTERS

No action is required from DOE Headquarters at this time.

STATEMENT OF WORK
DE-FG36-03GO13166
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Detailed Task List

Task 1: Transformer Design

Task 2: Marketing Plan

Task 3: Manufacturing Plan

Task 4: Prototype-Intent Design

Task 5: Intellectual Property

Task 6: Production Intent Prototypes

Task 7: UL1741 Test Facility

Task 8: Prototype Evaluation

Task 9: Manufacturing Prototypes

Task 10: Prototype Evaluation

Task 11: Internal Compliance Testing

Task 12: Technical Documentation

Task 13: UL Testing

Task 14: Field Evaluation by System Integrators

Task 15: Implement Marketing Plan

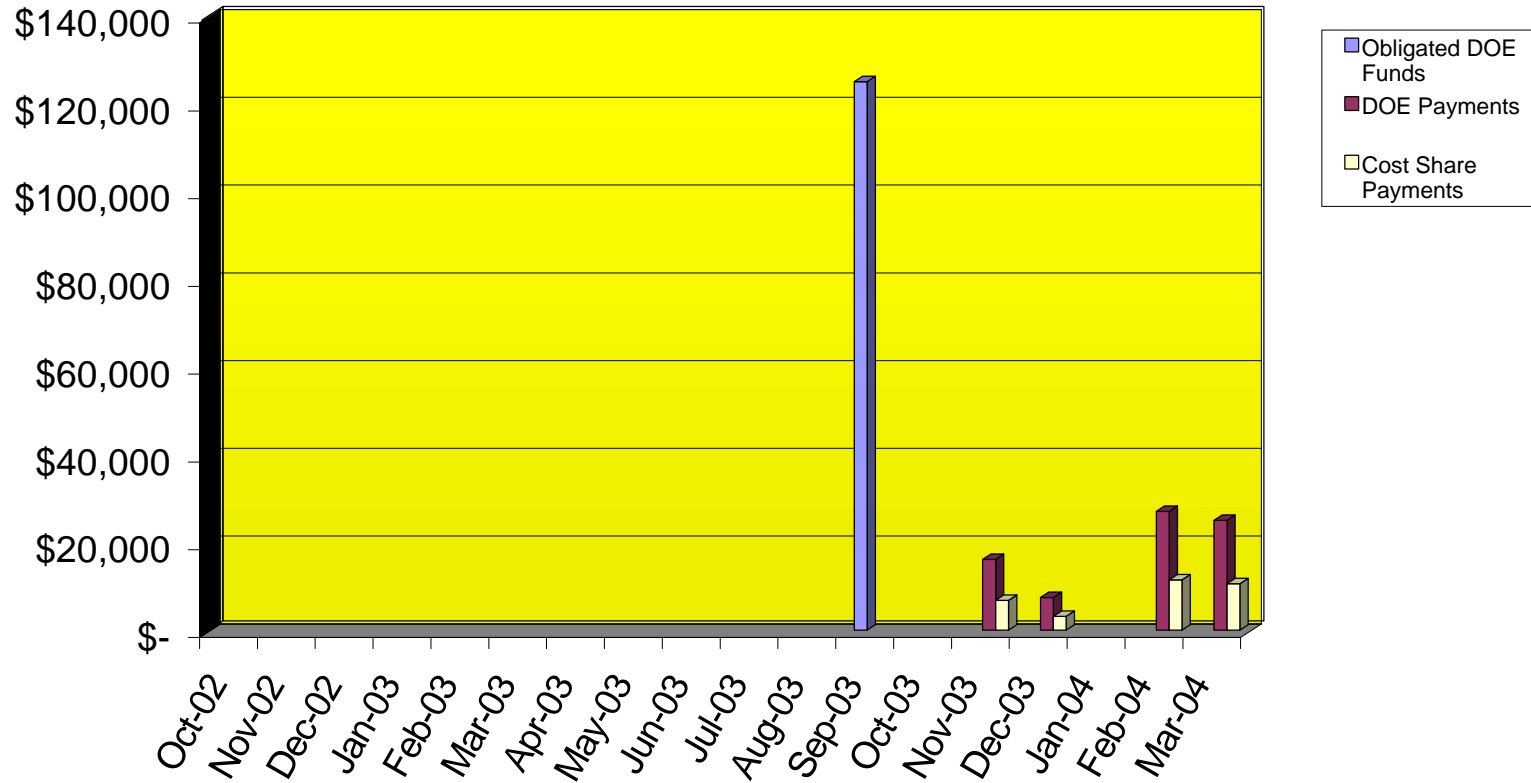
Task 16: Implement Manufacturing Plan

Project Cost Performance in DOE Dollars for Fiscal Year 2003

DE-FG36-03GO13166

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	Oct-02	Nov-02	Dec-02	Jan-03	Feb-03	Mar-03	Apr-03	May-03	Jun-03	Jul-03	Aug-03	Sep-03
Obligated DOE Funds	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$125,000
DOE Payment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Cost Share Payment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

	Oct-03	Nov-03	Dec-03	Jan-04	Feb-04	Mar-04	PFY*	Cumulative
Obligated DOE Funds	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$125,000
DOE Payment	\$0	\$16,131	\$7,456	\$0	\$27,096	\$25,036	\$0	\$75,719
Cost Share Payment	\$0	\$6,815	\$3,149	\$0	\$11,448	\$10,577	\$0	\$31,989

Approved DOE Budget:	\$125,000
Approved Cost Share Budget:	\$105,625
Total Project Budget:	\$230,625

* Prior Fiscal Years

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